



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/694,587

10/27/2003

Myoung-Hoon Park

P2044US

3751

8968 7590 04/15/2008
DRINKER BIDDLE & REATH LLP
ATTN: PATENT DOCKET DEPT.
191 N. WACKER DRIVE, SUITE 3700
CHICAGO, IL 60606

EXAMINER

SELBY, GEVELL V

ART UNIT

PAPER NUMBER

2622

MAIL DATE

DELIVERY MODE

04/15/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/694,587	PARK, MYOUNG-HOON	
	Examiner	Art Unit	
	Gevell Selby	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-19 and 22-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-19 and 22-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/15/08 has been entered.

Response to Arguments

2. Applicant's arguments filed 2/15/08 have been fully considered but they are not persuasive. The applicant submits the prior art does not submit the following limitations of the claimed invention:

(f) a selector in communication with the brightness comparator and the output of the image sensing unit, the selector outputting, in response to the brightness comparison result, one-of a chromatic image signal relative to the chromatic sensing element if the brightness of the digital image signal is greater than the predetermined reference brightness or and an achromatic image signal relative to the achromatic sensing element if the brightness of the digital image signal is equal to or smaller than the predetermined reference brightness, as stated in claim 12. The examiner respectfully disagrees.

Examiner's Reply:

Re claim 12) The Oda reference discloses a controller (22) or brightness comparator that compares estimated luminance of the R, G, B pixels signals output from the processor (20)

Art Unit: 2622

which reads on a brightness of the digital image signals received from the image sensing means with a threshold value or a predetermined reference brightness signal and outputs a comparison result, wherein the luminance value is greater than or less than the threshold value, in response to the automatic focusing indication signal, wherein the comparator sets up low illumination mode, if the estimated luminance is less than the threshold value and sets up a normal illumination mode, if the estimated illumination mode is greater than or equal to the threshold value (see column 12, lines 38-48) and the processor (20) or selector in communication with the brightness comparator and the output of the image sensing unit, the selector outputting, in response to the brightness comparison result, one-of a chromatic image signal (R, G, B signals) relative to the chromatic sensing element if in the normal illumination mode, which means the brightness of the digital image signal is greater than the predetermined reference brightness (see column 12, lines 61-63) or and an achromatic image signal (cell signals) relative to the achromatic sensing element if in the low illumination mode, which means the brightness of the digital image signal is equal to or smaller than the predetermined reference brightness (see column 12, lines 52-59). It is irrelevant that the luminance value of the Oda reference is estimated, since it is derived from the digital image signal and the claim does not exclude estimated values. Therefore, Oda in view of Hata discloses all the claimed limitations.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

Art Unit: 2622

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 12-19, 22, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oda, US 7,154,547, in view of Hata, US 6,825,883.

In regard to claim 12, Oda, US 7,154,547, discloses a digital camera comprising:

(a) an imaging photography unit (see figure 1, element 12) comprising a focusing lens (see figure 1, element 8), a focusing lens driving unit (see column 4, lines 27-42: it is implied the Oda reference comprises a focusing lens driving unit in order to control the axial position of the lens), and an image sensing unit (see figure 1, elements 8, 12, 16, and 18) with a light-receiving surface divided into a chromatic sensing element (see figure 13, elements r, G, and B) and an achromatic sensing element (see figure 13, elements CC), the image sensing unit outputting a digital image signal (see column 11, lines 1-36);

(b) a digital signal processor (see figure 1, element 20) the processes the digital image (see column 11, lines 39-50);

(c) a data storage unit (see figure 1, elements 21 and 30);

(d) an automatic focusing shutter that outputs an automatic focusing indication signal (see column 4, lines 27-51: it is implied the Oda reference comprises a shutter since it controls the shutter speed); and

(e) a controller (22) or brightness comparator that compares estimated luminance of the R, G, B pixels signals output from the processor (20) which reads on a brightness of the digital image signals received from the image sensing means with a threshold value or a predetermined reference brightness signal and

outputs a comparison result, wherein the luminance value is greater than or less than the threshold value, in response to the automatic focusing indication signal, wherein the comparator sets up low illumination mode, if the estimated luminance is less than the threshold value and sets up a normal illumination mode, if the estimated illumination mode is greater than or equal to the threshold value (see column 12, lines 38-48)

(f) the processor (20) or selector in communication with the brightness comparator and the output of the image sensing unit, the selector outputting, in response to the brightness comparison result, one-of a chromatic image signal (R, G, B signals) relative to the chromatic sensing element if in the normal illumination mode, which means the brightness of the digital image signal is greater than the predetermined reference brightness (see column 12, lines 61-63) or and an achromatic image signal (cell signals) relative to the achromatic sensing element if in the low illumination mode, which means the brightness of the digital image signal is equal to or smaller than the predetermined reference brightness (see column 12, lines 52-59).

The Oda reference does not disclose comprising (g) a focus signal generator in communication with an output of the selector, the focus signal generator analyzing high frequency components of the chromatic or achromatic image signal from the selector, calculating a focal value according to said high frequency components of the chromatic or achromatic image signal, and outputting the focus signal to the focusing lens driving unit to move the focusing lens to a focal location.

Hata, US 6,825,883, discloses a digital camera comprising a focus signal generator (see figure 2, elements 1081 and 1085) and in communication with an output of the selector, the focus signal generator analyzing high frequency components of the chromatic or achromatic image signal from the selector, calculating a focal value according to said high frequency components of the chromatic or achromatic image signal, and outputting the focus signal to the focusing lens driving unit to move the focusing lens to a focal location (see column 11, lines 29-51).

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Oda, US 7,154,547, in view of Hata, US 6,825,883, to have a focus signal generator in communication with an output of the selector, the focus signal generator analyzing high frequency components of the chromatic or achromatic image signal from the selector, calculating a focal value according to said high frequency components of the chromatic or achromatic image signal, and outputting the focus signal to the focusing lens driving unit to move the focusing lens to a focal location, in order to reduce the time required for the auto-focus operation when there is only a small number of pixels in the image pickup device on recording..

In regard to claim 13, Oda, US 7,154,547, in view of Hata, US 6,825,883, discloses the digital camera of claim 12. The Oda reference discloses further comprising a recording medium interface for inserting a recording medium (see figure 1, element 24 and column 4, lines 61-62).

In regard to claim 14, Oda, US 7,154,547, in view of Hata, US 6,825,883, discloses the digital camera of claim 13. The Oda and Hata references do not disclose wherein the recording medium comprises a portable compact flash card, smart media, and memory stick.

The Official Notice taken in the previous office action stating that is well known in the art that a recording medium comprises a portable compact flash card, smart media, and memory stick, in order to be compatible with multiple devices to transfer image data via the medium for further processing or viewing is taken as prior art. Since the applicant has not timely traversed the old and well known statement, the above is now considered admitted prior art. See MPEP 2144.03 (c).

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Oda, US 7,154,547, wherein the recording medium comprises a portable compact flash card, smart media, and memory stick, in order to be compatible with multiple devices to transfer image data via the medium for further processing or viewing.

In regard to claim 15, Oda, US 7,154,547, in view of Hata, US 6,825,883, discloses the digital camera of claim 12. The Oda reference discloses further comprising a display unit (see column 11, lines 59-63).

In regard to claim 16, Oda, US 7,154,547, in view of Hata, US 6,825,883, discloses the digital camera of claim 15. The Oda reference discloses wherein the display unit is a color LCD monitor (see column 11, lines 59-63).

In regard to claim 17, Oda, US 7,154,547, in view of Hata, US 6,825,883, discloses the digital camera of claim 12. The Oda reference discloses wherein the data storage unit comprises a temporary storage unit (see figure 1, element 21) and a non-volatile storage unit (see figure 1, element 30).

In regard to claim 18, Oda, US 7,154,547, in view of Hata, US 6,825,883, discloses the digital camera of claim 12. The Oda reference discloses wherein the image sensing unit comprises:

- (a) a light-receiving surface having a plurality of pixel sensors arranged regularly on a two-dimensional region of a predetermined size (see figure 13, element 1200);

- (b) a scanning electronic circuit that outputs an electric image signal of incident light contacting a plurality of pixel sensors that has undergone photoelectric conversion (see column 5, lines 30-39); and

- (c) a color filter mosaic separated at a predetermined distance from the light-receiving surface in the direction of the incident light (see column 5, lines 27-29).

In regard to claim 19, Oda, US 7,154,547, in view of Hata, US 6,825,883, discloses the digital camera of claim 18. The Oda reference discloses wherein the light-receiving surface comprises a chromatic sensing unit (see figure 2, element 204) for receiving chromatic light entering through the color filter mosaic (see column 5, lines 54-64) and an achromatic sensing unit for receiving direct incident achromatic light that has not passed through the color filter mosaic (see column 6, lines 37-43).

In regard to claim 22, Oda, US 7,154,547, in view of Hata, US 6,825,883, discloses the digital camera of claim 12. The Oda reference discloses wherein the focusing lens driving unit moves the focusing lens within a predetermined range in response to the automatic focusing indication signal and fixes the location of the focusing lens in response to the focus signal (see column 4, lines 42-47).

In regard to claim 24, Oda, US 7,154,547, in view of Hata, US 6,825,883, discloses the digital camera of claim 12. The Oda reference discloses wherein the light-receiving surface may be realized by a metal oxide semiconductor image sensor or a charged coupled device (see column 4, lines 9-12 and column 5, lines 36-39).

5. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oda, US 7,154,547, in view of Hata, US 6,825,883, as applied to claim 12 above, and further in view of Dinev et al., US 6,788,338.

In regard to claim 23, Oda, US 7,154,547, in view of Hata, US 6,825,883, discloses the digital camera of claim 12. The Oda and Hata references do not disclose wherein the chromatic sensing element and achromatic sensing element are controlled by separate control signals and output only photoelectrically converted chromatic and achromatic image signals through separate paths, respectively.

Dinev et al., US 6,788,338, discloses a digital camera wherein the chromatic sensing element (see figure 1, element 103) and achromatic sensing element (see figure 1, element 104) are controlled by separate control signals (see column 4, lines 42-45) and output only photoelectrically converted chromatic and achromatic image signals through separate paths, respectively (see column 4, lines 46-63 and figure 1).

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Oda, US 7,154,547, in view of Hata, US 6,825,883, and further in view of Dinev et al., US 6,788,338, wherein the chromatic sensing element and achromatic sensing element are controlled by separate control signals and output only photoelectrically converted chromatic and achromatic image signals through separate paths, respectively, in order to capture high resolution images at a high frame rate.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gevell Selby whose telephone number is 571-272-7369. The examiner can normally be reached on 8:00 A.M. - 5:30 PM (every other Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on 571-272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2622

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

gvs

/Lin Ye/
Supervisory Patent Examiner, Art Unit 2622